Overview

NOTE: These QuickSpecs are for both the HP StoreEasy 3840 Gateway Storage Blade products (front of document) and the HP StoreEasy 3830 Gateway Storage Blade products (rear of document).

HP StoreEasy 3840 Gateway Storage Blade is a new converged storage platform from HP that supports both file and application workloads over ubiquitous Ethernet. HP StoreEasy delivers file and application storage made easy. Built on industry-standard HP ProLiant BL460c Generation 8 hardware, the HP StoreEasy 3840 Gateway Storage Blade is designed to deliver efficient, secure, and highly available storage that supports hundreds to thousands of concurrent users and multiple workloads. The HP StoreEasy 3840 Storage product reduces your cost of ownership by simplifying management, increasing resource utilization, centralizing growth, and protecting your data. StoreEasy management provides a simple and consistent experience for centrally managing block and file storage for multiple workloads.

What's New

- Brand new model - StoreEasy 3840 Gateway Storage Blade
- Now running Windows Storage Server 2012 R2, Standard Edition

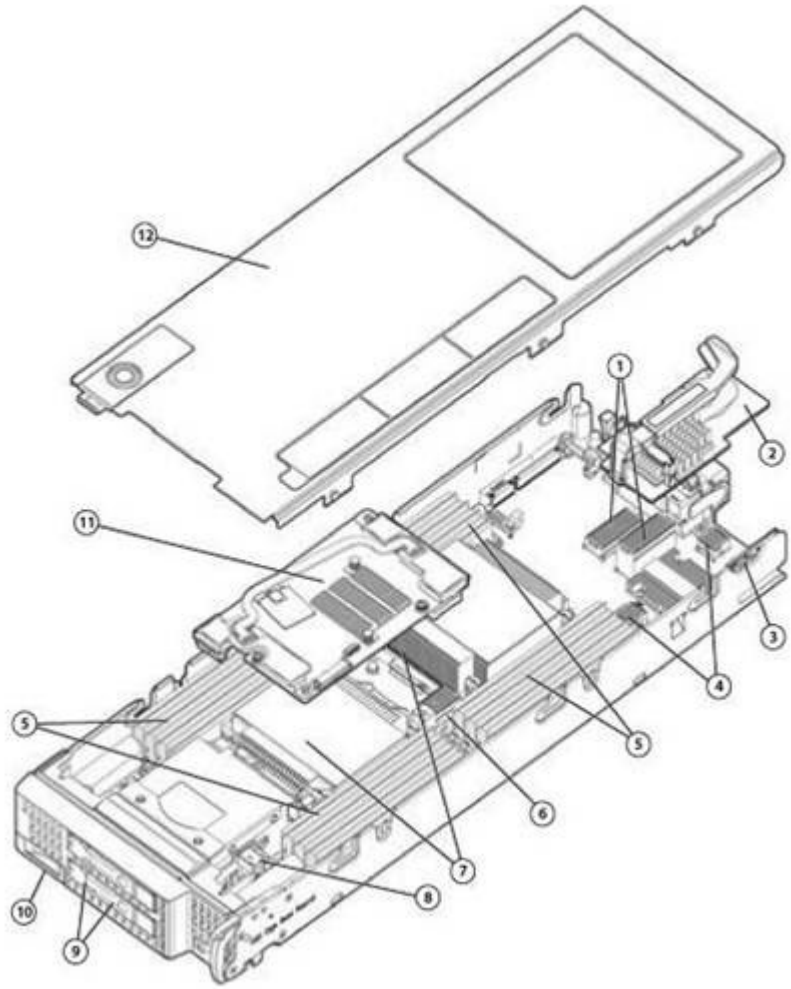
Models

HP StoreEasy 3800 Gateway Storage Blade

The HP StoreEasy 3840 Gateway Storage Blade gives you the capability to add file services from your C3000 or C7000 Blade Enclosure to your array or Fibre Channel SAN. The StoreEasy 3840 is built upon a ProLiant BL460c Gen 8 Blade server.

HP StoreEasy 3840 Storage Gateway Blade	E7X08A

Overview



1. Two (2) PCIe 3.0 mezzanine I/O expansion slots
2. FlexibleLOM adapter
3. Micro SDHC card connector
4. FlexibleLOM connectors (supporting one (1) FlexibleLOM)
5. Sixteen (16) DDR3 DIMM memory slots (8 per processor)
6. HP Smart Array P220i Controller connector
7. Up to two (2) Intel® Xeon® E5-2600 family processors
8. Internal USB 2.0 and Trusted Platform Module (TPM) connectors
9. Two (2) small form factor (SFF) hot-plug drive bays
10. HP c-Class Blade SUV (Serial, USB, VGA) connector
11. HP Smart Array P220i Controller with 512MB FBWC
12. Access panel

Features and Benefits

Optimized for File Storage in the Enterprise

The HP StoreEasy 3840 Gateway Storage Blade comes to your business pre-configured with hardware and the latest generation storage OS for purpose-built file storage. StoreEasy installation and network configuration wizards simplify installation and prevent configuration errors for faster deployment.

Best practices driven storage provisioning tool discovers system storage and recommends the most efficient setup for optimum performance, optimum capacity or a balanced configuration based on the available storage.

Saves Your Business Time and Money for Greater Efficiency

The HP StoreEasy 3840 Gateway Storage Blade supports large numbers of users thanks to a high-performance file serving controller and a wide range of disk drives. Utilize a broad range of file access protocols, including Microsoft Hyper-V and SQL Server application storage over SMB3 or iSCSI.

File sync and share feature enables mobile workers to access their files from anywhere, while providing corporate data controls including data encryption, data wipe, user lock screen password enforcement, file classification and storage quotas.

You can increase capacity use with non-intrusive data de-duplication that provides an average 50-60% in space savings.

Reduce your branch office WAN usage by automatically caching frequently accessed corporate datacenter files with Hosted BranchCache.

Safeguard Your Data

The HP StoreEasy 3840 Gateway Storage Blade protects data while at rest with file system encryption and BitLocker Drive Encryption, and while it is being transferred with SMB3 encryption and signing.

Use File Classification Infrastructure to dynamically identify files based on sensitivity and implement sophisticated access controls using Active Directory Rights Management Services.

Install and run endpoint protection such as antivirus on the system itself - eliminating the cost and complexity of connecting an external endpoint protection server. Prevent against data loss with Volume Shadow Copy Service online snapshots and support for agent based backup software.

Leverage optional HP Autonomy LiveVault and HP Data Protector software for highly secure and efficient policy driven offsite cloud and hybrid cloud backup.

Highly Available: Prevent User and Organization Disruption

The HP StoreEasy 3840 Gateway Storage Blade helps you increase uptime of the system with such standard features as near continuous health monitoring with HP Active Health System, mirrored OS disks, redundant fans (not available on all models) and power, and advanced memory protection.

Confidently deploy large volumes leveraging improved file system online self-healing, online verification, and precise and rapid repair that massively reduces downtime from file corruption.

Built on HP ProLiant Gen8 servers and Microsoft Windows Storage Server 2012 R2 for reliability and ease-of-use.

Three year onsite parts and labor warranty for the system, and one year of 24 x 7 software telephone support.

Standard Features

Operating System Microsoft Windows Storage Server 2012 R2, Standard Edition

- Windows Storage Server 2012 R2 (WSS2012 R2) includes a robust range of file serving and storage capabilities. It addresses heterogeneous environments and it enables more efficient storage utilization. WSS2012 R2 delivers a similar level of performance and reliability as more expensive storage solutions and it offers support for both file (SMB and NFS) and block (iSCSI) protocols, allows for a flexible mix of configurations and includes advanced data management tools. WSS2012 R2 leverages your Windows Server management skill sets and tools including Active Directory, PowerShell and System Center.
- Extensive protocol support: SMB (, 2.0, 2.1, 3.0, 3.02), NFS (v2, v3, v4.1), WebDAV, HTTP/HTTPS, FTP/FTPS, ISCSI
- SMB 3: Leverage high performance continually available file shares to deliver feature-rich storage for business-critical applications and virtual servers using advanced new functionality.
- New VHDX Standard: Deploy larger capacity virtual storage that can grow to 64 terabytes, is more resilient against corruption, and provides more efficient usage of new 4 KB sector hard disks with the new VHDX virtual storage standard.
- Live Storage Migration: Maintain maximized service-level availability even while moving virtual machine storage between host servers independent of the actual virtual machine.
- SMB Multi-channel: Enable aggregation of network bandwidth and network fault tolerance when multiple paths are available between SMB clients and file servers.
- NFS v4.1: For Windows Storage Server 2012 R2, Server for NFS has been updated to support continuous availability. These improvements make it possible to reliably store and run VMware ESX on a virtual machine that is running Windows Server 2012 R2 by using the NFS protocol to share files. Additional improvements in failover clustering take advantage of better resilience to hardware and software outages that may afflict individual cluster nodes. At the same time, failover clustering isolates VMware ESX hypervisor hosts from intermittent glitches during failovers.
- iSCSI: Some applications require block storage. iSCSI Target Server can provide these applications with continuously available block storage. Since the storage is remotely accessible it can also consolidate block storage for central or branch office locations. By using boot-capable NICs or a software loader, you can deploy hundreds of diskless servers. This is ideal for large deployments of identical operating system images, such as a Hyper-V server farm or High Performance Computing (HPC) clusters.
- Data Deduplication: Data deduplication enables Windows Storage Server 2012 R2 to store more data in less physical space and achieve storage efficiency that is significantly higher than was possible in previous releases of Windows Storage Server that used Single Instance Storage (SIS) or NTFS file system compression. Data deduplication uses variable size chunking and compression, which deliver optimization ratios of 2:1 for general file servers and up to 20:1 for virtualization data. Evaluate your savings with the Deduplication Evaluation Tool. When the deduplication feature is installed, the Deduplication Evaluation Tool (DDPEval.exe) is automatically installed to the \Windows\System32\ directory. This tool can be copied from any Windows Storage Server 2012 installation to systems running Windows Server 2012 R2, Windows Server 2012, Windows Server 2008 R2, or Windows 7 . You can use it to determine the expected savings that you would get if deduplication is enabled on a particular volume. DDPEval.exe supports local drives, and it supports evaluating mapped or unmapped remote shares.
- Volume Shadow Copy Service: creates point-in-time copies (snapshots) of files and folders at predetermined time intervals that can then be accessed from client computers.
- VSS for Remote SMB File Shares: Leverage proven Volume Shadow Copy Service (VSS) to offload snapshot and backup operations to remote storage from VSS hardware providers within Hyper-V virtual machines.
- Offloaded data transfer (ODX): Enables you to accomplish more with existing external storage

arrays by letting you quickly move large files and virtual machines directly between storage arrays, which reduces host CPU and network resource consumption.

- Thin Provisioning and Trim: Full support for thinly provisioned storage arrays, which lets you get the most out of your storage infrastructure. Sophisticated storage solutions offer just-in-time allocations known as "thin provisioning," and the ability to reclaim storage that is no longer needed, known as "trim."
- Hosted Branch Cache - Using client/server architecture, Windows 7 client computers can cache content on the local network via the Hosted Cache running on the StoreEasy 5000 Storage. Other clients who need the same content retrieve it directly from the Hosted Cache.
- DFS Namespaces: Enables you to group shared folders that are located on different servers into one or more logically structured namespaces. Each namespace appears to users as a single shared folder with a series of subfolders. However, the underlying structure of the namespace can consist of numerous file shares that are located on different servers and in multiple sites.
- Distributed File System Replication (DFS-R): Enables you to efficiently replicate folders (including those referred to by a DFS namespace path) across multiple servers and sites. DFS Replication uses a compression algorithm known as remote differential compression (RDC). RDC detects changes to the data in a file, and it enables DFS Replication to replicate only the changed file blocks instead of the entire file.
- Work Folders: With Work Folders users can store and access work files on personal computers and devices, often referred to as bring-your-own device (BYOD), in addition to corporate PCs. Users gain a convenient location to store work files, and they can access them from anywhere. Organizations maintain control over corporate data by storing the files on centrally managed file servers, and optionally specifying user device policies such as encryption and lock-screen passwords. Work Folders can be deployed with existing deployments of Folder Redirection, Offline Files, and home folders. Work Folders stores user files in a folder on the server called a sync share. You can specify a folder that already contains user data, which enables you to adopt Work Folders without migrating servers and data or immediately phasing out your existing solution.
- File Server Resource Manager (FSRM): File Server Resource Manager is a set of features that allow you to manage and classify data that is stored on file servers. File Server Resource Manager includes the following features:
  - Storage reports: Storage reports are used to help you identify trends in disk usage and how your data is classified. You can also monitor a selected group of users for attempts to save unauthorized files.
  - File Classification Infrastructure: File Classification Infrastructure provides insight into your data by automating classification processes so that you can manage your data more effectively. You can classify files and apply policies based on this classification. Example policies include dynamic access control for restricting access to files, file encryption, and file expiration. Files can be classified automatically by using file classification rules or manually by modifying the properties of a selected file or folder.
  - File Management Tasks: File Management Tasks enables you to apply a conditional policy or action to files based on their classification. The conditions of a file management task include the file location, the classification properties, the date the file was created, the last modified date of the file, or the last time the file was accessed. The actions that a file management task can take include the ability to expire files, encrypt files, or run a custom command.
  - Quota management: Quotas allow you to limit the space that is allowed for a volume or folder, and they can be automatically applied to new folders that are created on a volume. You can also define quota templates that can be applied to new volumes or folders.
  - File screening management: File screens help you control the types of files that user can store on a file server. You can limit the extension that can be stored on your shared files. For example, you can create a file screen that does not allow files with an MP3 extension to be stored in personal shared folders on a file server.

Standard Features

- Initial Configuration Tasks Wizard: Simplifies and accelerates new device deployment by presenting basic system settings on your first boot.
- Server Manager
- Unlimited Client Access Licenses (CALs) included

NOTE: Windows Storage Server 2012 R2 and Windows Server 2012 R2 are built on the same code base. Applications certified for Windows Server are expected to have the same application compatibility profile on Windows Storage Server. Windows Storage Server 2012 R2 and Windows Server 2012 R2 have the same application frameworks, services and plumbing to support running the full breadth of Window-compatible applications. Applications that rely upon certain roles that are removed from Windows Storage Server 2012 R2, such as fax server, active directory domain controller or terminal services will not be able to leverage those roles. Independent Software Vendors (ISVs) ultimately decide what versions and editions of Windows are supported by their products and users should review ISV compatibility and support information before purchasing. HP StoreEasy customers should review the End User License Agreement (EULA) to see the types of applications that are permitted for installation. All versions of Windows Storage Server 2012 R2 can join Active Directory domains, but cannot be a domain controller. More information on Windows Storage Server 2012 R2 Standard Edition can be found here: http://technet.microsoft.com/en-us/library/jj643303.aspx

Processor / Cache Memory	HP BL460c Gen8 Intel® Xeon® E5-2609v2 (2.5GHz/4-core/10MB/80W) Processor	
Memory	**Type**	**DDR3 Registered (RDIMM) standard**
	Standard	16GB (4 x 4GB)
	DIMM Sockets	16
Network Controller	NIC Ports	2
	Controller	One (1) HP FlexFabric 10Gb 2-port 554FLB FlexibleLOM

HP StoreEasy 3840

Expansion Slots

Two (2) I/O expansion mezzanine slots:

- x16 PCIe 3.0 Type A (supports Type A mezzanine cards) (expansion slot 1).
  NOTE: This expansion slot supports dual-port mezzanine cards: one port is routed to interconnect module bay 3 and the other to bay 4.
- x16 PCIe 3.0 Type B (supports Type A and Type B mezzanine cards (expansion slot 2).
  NOTE: This expansion slot supports dual-port and quad-port mezzanine cards. For dual-port cards, one port is routed to interconnect module bay 5 and the other to bay 6. For quad-port cards, one port is routed to interconnect module bay 5, one to bay 6, one to bay 7, and one to bay 8.
  NOTE: A second processor must be installed (in processor slot 2) to have access to the second expansion slot (expansion slot 2).

Mezzanine card options include:

Standard Features

- Dual-port 10Gb FlexFabric, 10Gb Flex-10, 10GbE options, and quad-port 1Gb Ethernet server adapter mezzanine options for additional network ports.
- Dual-port 8Gb Fibre Channel HBA for SAN connectivity.

Storage Controller	**NOTE:** HP StoreEasy 3840 Gateway Storage Blade products include a storage controller designed for internal drives housing the O/S mirror only; an HBA is required to address external SAN or array storage.	
	Controller(s)	HP Smart Array P220i with 512 MB FBWC
	RAID	0/1
Storage	Hard Drives	
	Internal	Two 2.5" (Small Form Factor) hot-plug bays • 2 x 300GB 6G SAS 15K SFF HDDs for O/S mirror
	External	Designed for attach to Fibre Channel (HBA required), SAS (HBA required), or iSCSI (Microsoft iSCSI initiator included) arrays
Power Supply	Powered by c-Class Blade Enclosure	
System Fans	Within c-Class Blade Enclosure	
Form Factor	Half-height server blade that plugs into the HP BladeSystem c3000 and c7000 enclosures	

Optional Software

HP Data Protector Software

HP Data Protector software is enterprise data protection and disaster recovery, ensuring recovery from any disruption. Data Protector integrates a variety of techniques to eliminate backup and recovery windows. The capabilities to eliminate planned downtime range from online backup and backup of open files to zero-downtime, zero-impact backup. The software provides industry-leading instant recovery as well as several disaster recovery alternatives to eliminate unplanned downtime, allowing recovery of entire data centers in minutes.

Data Protector is enabling organizations to reduce costs by automating routine tasks to maximize the effectiveness of the data protection staff. For the price of an entry-level product, it provides the enterprise functionality customers need. Data Protector scales from single server to distributed enterprise, covering an extensive range of heterogeneous applications, operating environments and storage configurations with a single solution.

All HP StoreEasy 3840 support using Data Protector as a backup software solution.

For more information on HP Data Protector: http://www.hp.com/go/dataprotector

HP LiveVault

HP LiveVault enables organizations to protect their critical application data and manage their long-term retention needs in the cloud. The LiveVault agent that is installed on HP StoreEasy Storage encrypts all data before transferring it. All data remains encrypted at HP secure, offsite, underground data centers - as well as on the optional TurboRestore(TM) appliance which resides in the customer data center. To ensure the physical security and availability of stored data, the LiveVault service mirrors all data to a second, geographically dispersed data center for full failover and redundancy. For a 30 day free trial of HP LiveVault go to: www.remotedatabackups.com/storeeasylivevault

SAN / Array Compatibility

Host Bus Adapter (HBA) Support

HP StoreEasy 3840 Gateway Storage Blade products are designed to be connected to a SAN or storage array by adding a recommended Fibre Channel or SAS HBA, or by using an iSCSI initiator.

HBA selection is left as your choice based on existing infrastructure and/or desired array support. Please see compatible HBAs listed in the 'Options' section below.
NOTE: See the following URL for additional information about Fibre Channel HBAs:
http://h18006.www1.hp.com/storage/saninfrastructure/hba.html

HP SAN / Array Support

HP 3PAR StoreServ	http://h18006.www1.hp.com/storage/disk_storage/3par/index.html
HP StoreVirtual	http://h18000.www1.hp.com/products/quickspecs/13254_div/13254_div.html
HP P9000/XP	http://h18006.www1.hp.com/storage/xparrays.html
HP P6000/EVA	http://h18006.www1.hp.com/products/storageworks/eva/index.html
HP P2000/MSA	http://h18000.www1.hp.com/products/quickspecs/13551_na/13551_na.pdf

HP StoreEasy 3840 Gateway Storage Blade products and third-party storage arrays/SAN interoperability statement

HP acknowledges that some third-party storage arrays/SAN environments have been successfully tested for interoperability with HP StoreEasy 3840 products. HP will provide support for the HP StoreEasy 3840 products when connected to third-party storage arrays, but HP will not provide support on third-party storage arrays/SAN unless specifically called out in an HP Support contract. HP may support the third-party SAN environment attached to HP StoreEasy 3840 product when specifically under contract with HP, but that SAN coverage does not extend to supporting the SAN connectivity of the third-party array.

If you call HP Services and the problem is determined to be caused by a third-party storage array or the storage arrays' connectivity into a non-HP supported SAN, you will be directed to contact the third-party storage array supplier for support. Please refer to the third-party supplier for information relating to specific support of their storage arrays with Windows Storage Server 2012 R2 Standard Edition.

Models (Pre-configured)

These models come with factory-installed drives and the Microsoft Windows Storage Server 2012 Standard Edition operating system pre-installed

Choose a Pre-configured Model

NOTE: All options ship separately and are not factory integrated.

HP StoreEasy 3840 Gateway Storage Blade		
	Operating System	Microsoft Windows Storage Server 2012 R2, Standard
Specifications	**Processor**	Intel® Xeon® E5-2609 v2 (2.5GHz/4-core/10MB/6.4GT-s QPI/80W) Processor
	Memory	16 GB (4 x 4GB Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory)
	Storage Controller	Embedded Smart Array 220i with 512MB FBWC Controller with internal SAS ports for O/S drives
	Internal Storage	2 x 300GB 6G SAS 10K 2.5" ENT hot-plug SFF HDDs (O/S mirror)
	Network Ports	HP FlexFabric 10Gb 2-port 554FLB FlexibleLOM
	Expansion Slots	2 x PCIe 3.0 mezzanine
	Form Factor	Half-height C-class blade
HP StoreEasy 3840 Gateway Storage Blade		E7X08A

Add a second processor

HP BL460c Gen8 Intel® Xeon® E5-2609v2 (2.5GHz/4-core/10MB/80W) Processor Kit	718362-B21

Add More Memory

NOTE: HP recommends that you add the same type memory to the product that is shipped standard with the product.

NOTE: HP memory from previous generation servers are not fully compatible with Smart Memory features in Gen8 Servers.

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

NOTE: PC3L is a low voltage memory.

See the HP ProLiant Gen 8 QuickSpecs for information on memory configurations. http://h18004.www1.hp.com/products/quickspecs/14212_na/14212_na.html

Add additional options

HP Networking

NOTE: Each 10 Gigabit Ethernet adapter requires a minimum of 2GB of server memory.

NOTE: A 10 Gigabit Ethernet adapter supports linking at 1Gbps or 10Gbps when connected to an interconnect module with 10Gb Ethernet downlinks.

NOTE: A 10 Gigabit Ethernet adapter supports linking at only 1Gbps when connected to

	an interconnect module with 1Gb Ethernet downlinks. **NOTE:** The 10 Gigabit Ethernet adapters on each server blade connects to a 10Gb interconnect in bays 3-6 (HP BladeSystem c7000 Enclosure) or bays 2-4 (HP BladeSystem c3000 Enclosure).	
	10 Gigabit Ethernet Mezzanines	
	HP Ethernet 10Gb 2-port 560M Adapter **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14478_na/14478_na.html.	665246-B21
	HP Flex-10 10Gb 2-port 530M Adapter **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14217_na/14217_na.html.	631884-B21
	HP FlexFabric 10Gb 2-port 534M Adapter **NOTE:** Please see QuickSpecs for technical specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/14619_na/14619_na.html	700748-B21
	HP Flex-10 10Gb 2-port 552M Adapter **NOTE:** Please see QuickSpecs for technical specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/14218_na/14218_na.html	674764-B21
	HP FlexFabric 10Gb 2-port 554M Adapter **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14221_na/14221_na.html.	647590-B21
	1 Gigabit Ethernet Mezzanines	
	HP Ethernet 1Gb 4-port 366M Adapter **NOTE:** Please see QuickSpecs for technical specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/14335_na/14335_na.html	615729-B21
	HP Infiniband Mezzanine Adapters **NOTE:** When an InfiniBand adapter is installed in mezzanine slot 1, only one port is active (regardless of operating mode). When installed in any other mezzanine slot, both ports are active.	
	HP Infiniband QDR/Ethernet 10Gb 2-port 544M Adapter **NOTE:** The QDR InfiniBand adapter may be installed in any mezzanine slot of the server.	644160-B21
	HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544M Adapter **NOTE:** The FDR InfiniBand adapter must be installed in mezzanine slot 1 for FDR mode and may be installed in any mezzanine slot if operated in any other mode.	644161-B22
	HP InfiniBand FDR 2-port 545M Adapter **NOTE:** InfiniBand QDR and FDR speeds are only supported on the HP BladeSystem c7000 Enclosure. For additional information, please see the HP BladeSystem c7000 Enclosure and InfiniBand QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12586_na/12586_na.html http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.htm	702213-B21
Storage Controllers	HP Smart Array P721m/2G FBWC 4-ports Ext Mezzanine SAS Controller	650072-B21
	HP Smart Array P721m/512 4-ports Ext Mezzanine SAS Controller	655636-B21
	HP Smart Array P731m/2GB FBWC 6Gb 4-ports Ext Mezzanine SAS Controller	698535-B21
	HP Smart Array P731m/512 FBWC 6Gb 4-ports Ext Mezzanine SAS Controller	698536-B21

Models (Pre-configured)

NOTE: Please see the QuickSpecs for Technical Specifications and additional information at
http://h18000.www1.hp.com/products/quickspecs/14404_na/14404_na.html.
(Smart Array P721M Controller)
http://h18000.www1.hp.com/products/quickspecs/14626_na/14626_na.html.
(Smart Array P731M Controller)

HP Security	HP Trusted Platform Module Option **NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM. **NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	488069-B21

HP StoreEasy 3840 Gateway Storage products are designed and optimized for connection to SAN storage arrays and use HBAs, rather than additional Storage Controllers.
NOTE: HBAs are not included standard. HBA selection is left as your choice based on existing SAN infrastructure and/or desired array support.

HP Fibre Channel	HP LPe1605 16Gb Fibre Channel HBA for BladeSystem c-Class **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/ 14742_na/ 14742_na.html	718203-B21
	HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14338_na/14338_na.html	659818-B21
	HP QMH2672 16Gb Fibre Channel Host Bus Adapter **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14622_na/14622_na.html	710608-B21
	HP QMH2572 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14230_na/14230_na.html	651281-B21

Service and Support, HP Care Pack, and Warranty Information

Warranty

HP StoreEasy 3840 Gateway Storage Blade products come with a standard 3-3-3 warranty (3 years parts exchange, 3 years labor and 3 years onsite, next business day response). Software media is warranted to be free of physical defect for a period of 90 days from delivery.

Services Included with the Product One year of HP Software Support, standard 9x5 business hours (software advisory and remedial software telephone support, new version license rights, and media and documentation distribution service).

For increased uptime, productivity and ROI-HP Care Pack packaged services for Storage

These days, you need to get the most out of your storage investment-you can't afford not to. When you buy HP storage products and solutions, it's also a good time to think about what levels of service and support you may need. To help take the worry out of deploying, designing, maintaining, and managing your environment, we've designed a portfolio of service options that are as: flexible, reliable and scalable as your storage. Unlike storage-only vendors, we take a holistic approach to your entire environment, bridging storage, servers, blades, software and network infrastructures with our HP Care Pack packaged services for Storage.

Protect your business beyond the warranty

When it comes to robustness and reliability, standard warranties on today's computing equipment have matured just as the technologies have matured. Good news on some fronts-but also a source of potential problems and subsequent consequences that come from depending on standard warranties alone. Standard warranty protects against product defects and some causes of downtime- but not the business. By using a standard approach to warranty uplifts, such as HP Care Pack Services, you can reduce downtime risks and be more certain of operational consistency for both mission-critical and standard business computing. Simply put, HP Care Pack Services normalize the warranty of combined products - helping you proactively guard against unplanned downtime.

Extending warranties with HP Care Pack Services

For cost-effective upgrading or extending your standard warranty, HP Care Pack Services offer a suite of standard reactive hardware and software support services that are sold separately, or combined as with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition, with HP Proactive Select we offer an innovative approach to service delivery that gives you the flexibility to acquire the specific proactive services you need today, then add services as your needs evolve. HP Proactive Select offers a broad set of technical or per-event type service options - including server, storage, and network, SAN device, and software, environment, installation and education services. Services that you can mix and match depending on your specific requirements, from preliminary planning and equipment delivery to installation, configuration, integration, and testing, through every level of ongoing support. Our HP Care Pack packaged services for Storage assures help when you need it most. And for many products, post-warranty HP Care Pack Services are available when your original warranty has expired.

HP Storage Services: Offering reliability, flexibility and value-just like your storage

HP Storage Services offers a full spectrum of customer care, from technology support to complex migrations to complete completely managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education offers flexible, comprehensive training on storage networking, disk storage systems, and storage software to help your IT staff get the most out of your investments. And HP Financial solutions extend innovative financing and asset management programs to cost-effective buy, manage and eventually retire your older equipment.

HP Storage Services, the trusted business technology experts who manage your technology in action, because when technology works, business works. http://www.hp.com/hps/storage

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at

Service and Support, HP Care Pack, and Warranty Information

http://www.hp.com/go/lookuptool

Recommended HP Care Pack Services for optimal satisfaction with your HP product.

Recommended Services

3-Year HP Support Plus 24

For a higher return on your storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Improve uptime with responsive hardware and software services
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP software at a predictable cost
- Increase customer satisfaction-with no interoperability gaps

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf

HP Installation and Startup Service for StoreEasy Storage

For smooth startup, HP Installation and Startup Service provides for deployment of your HP StoreEasy product while helping you establish readily available access to and management of your critical data and applications. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- System installation and setup by a HP technical specialist
- Reduced implementation time and cost
- Verification prior to installation that all service prerequisites are met
- Availability of an HP service specialist to answer basic questions related to this service during the orientation session
- Potential expansion of the number of shares and hosts

http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-6112ENL.pdf

HP Proactive Select Service

HP Proactive Select Service improves your IT performance and manageability through the use of cost effective flexible services. HP provides technical expertise and best practices to accelerate ROI of your technology investment. Selectable proactive services span a wide range of technology and process services - a flexible way to purchase proactive services that fit your particular environment and situation.

HP Proactive Select Service is technology agnostic and purchased in addition to your choice of underlying reactive support.

- Access to a list of flexible and customizable proactive service activities
- Enhance customers' in-house IT team with complementary assistance from HP
- Improved time to solution
- Reduce business risk and project costs by accessing HP specialists
- Simplify IT operational procedures by leveraging HP best practices

http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-3842ENN.pdf

Optional HP Care Pack Services that will enhance your HP product experience.

Optional Services

HP Data Migration Service for Windows
For customers who need to safely migrate Windows data within their TCP/IP networks with minimal impact to their operations:

You have a need to migrate data between Windows servers within your TCP/IP network. Or you have a need to migrate storage for your Windows servers. Or both. And you need to accomplish these migrations efficiently while minimizing risk at the same time.

HP Data Migration Service for Windows offers you a cost competitive and convenient way to accommodate data migration triggered by a need to refresh or consolidate storage, or to create different storage tiers. This service offers a migration cost in line with the costs of storage products in small and medium-sized storage environments. The service is delivered via a skilled HP service specialist with special consideration for data availability, integrity, and ongoing operational performance during the transfer process.
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-4734ENW.pdf

eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal
The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: http://www.hp.com/support

Customer Technical Training

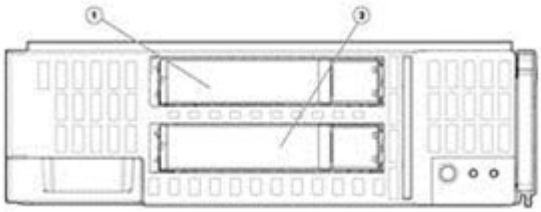
Consider education as an integral part of your strategy to get the best return on investment for your HP storage solution. HP offers a variety of training courses on storage software, networking, archiving and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led courses at one of our 80 training centers worldwide to on-site training customized to your needs or online.
www.hp.com/learn/storage

HP Services Awards

HP Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction. For a list of all our awards, please visit:
http://h20219.www2.hp.com/services/cache/433028-0-0-225-121.html

Additional Services Information	For more information about HP Care Pack Services for Storage, please visit: http://www.hp.com/hps/storageIf you have specific questions, contact your local HP representative. Contact information for a representative in your area can be found at "Contact HP" http://www.hp.com

Storage



1 - 2 Two 2.5" (SFF) hot plug hard drive bays (ships with two SAS drives for pre-installed OS)

StoreEasy 3840 Gateway Storage Blade			
System Unit	**Dimensions** (H x W x D) (with bezel)	7.11 x 2.18 x 20.37 in (18.07 x 5.54 x 51.76 cm)	
	Weight (approximate)	Maximum: all processors, 16 DIMMs, hard drives, mezzanine cards, and two flash cache batteries installed)	14.00 lb (6.33 kg)
		Minimum: one processor and 2 DIMMs installed	10.50 lb (4.75 kg)
	Power Specifications	For power specifications including input requirements, BTU rating, and power supply output, please see the: • HP BladeSystem c3000 Enclosure QuickSpecs at http://h18000.www1.hp.com/products/quickspecs/12790_div/12790_div.html. • HP BladeSystem c7000 Enclosure QuickSpecs at http://h18000.www1.hp.com/products/quickspecs/12810_div/12810_div.html To review typical system power ratings use the HP Power Advisor which is available via the online tool located at www.hp.com/go/hppoweradvisor	
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1,000 ft) above sea level to a maximum of 3,050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).

		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	3,050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
		Non-operating	9,144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
	Acoustic Noise	For acoustic noise specifications, please see the HP BladeSystem c-Class Enclosures QuickSpecs located at: HP BladeSystem c3000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12790_div/12790_div.html HP BladeSystem c7000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12810_div/12810_div.html	

HP iLO 4 On System Management	**Architecture**	PCI Express based health and remote management ASIC
	Processor	Embedded ARM processor core operating at 400MHz
	Upgradeability	Firmware upgradeable via Flash ROM
	Video Support	1920 x 1200 (16 bpp) DVR max resolution
	Interfaces	HP iLO Dedicated* Network connection (10/100/1000 Mb/s) on rack, tower and SL systems *Optional Module on some servers HP iLO Shared Network connection (10/100/1000 Mb/s) on rack, tower and SL systems HP iLO network connection to blades (100 Mb/s) to Onboard Administrator (with 10/100/1000 Mb/s uplink) on blade systems
	Memory	16 MB Flash 256 MB DDR 3 with ECC (112 MB after ECC and video)
	Operating System Support	For information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: http://www.hp.com/go/ossupport
	Client System Support	For information on Client System Support, please visit the HP iLO Feature Comparison Site at: www.hp.com/go/compareilo
	Client Browser Support	Microsoft Internet Explorer 9 **NOTE:** For customers using Protected Mode, please use the Java based version of Integrated Remote Console.

		Microsoft Internet Explorer 8 **NOTE:** For customers using Protected Mode, please use the Java based version of Integrated Remote Console.
		Microsoft Internet Explorer 7
		Firefox Extended Support Release (ESR) 10 (on supported Windows and Linux systems
		Firefox 3.6 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access
		Secure Socket Layer
		Secure Shell version 2
	Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface
		AES encryption of video
		RC4 encryption of video
	Directory Support Services	Active Directory v1.0 (Windows 2003)
	Driver Support	HP ProLiant iLO 4 Management Controller Driver Package
	Management protocols supported	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML
HP Smart Array P420i Controller	**Disk Drive and Enclosure Interface - Transfer Rate**	6Gb/s SAS (Serial Attached SCSI)
	Server Interface	x4 PCI Express host interface
	Cache Memory Speed	512MB flash backed write cache (FBWC) cache standard
	Logical Drives Supported	64 (with included 512MB cache)
	Host Memory Addressing	64-bit, supporting servers memory space greater than 4GB
	RAID Support	RAID 1 (mirroring) and RAID 0 (striping)
	Other	Upgradeable firmware with recovery ROM Online drive flash (with SAS drives)

Technical Specifications

HP FlexFabric 10Gb 2-port 554FLB FlexibleLOM	**Type**	Integrated dual-port KR 10Gb FlexibleLOM with FlexFabric (Flex-10, FCoE, hardware-based iSCSI, iSCSI boot, TCP/IP offload engine, and autosencing 1Gb/10Gb Ethernet capability)
	Network Processor	Emulex BE3
	Data Transfer Method	x8 PCI Express 2.0
	Network Transfer Rate	Two ports, each at 20Gbps full duplex; 40Gbps aggregate full duplex theoretical bandwidth **NOTE:** Each port is autosensing 1Gb/10Gb, and can interoperate with 1Gb or 10Gb HP BladeSystem c-Class interconnect components. Both ports will operate at the same speed. **NOTE:** Each port on the 554FLB adapter transmits from the server at 20Gbps (theoretical) full duplex.
	IEEE Compliance	802.1p, 802.1q, 802.1qau, 802.3ad, 802.3ae, 802.3ap (10GBase-KX4) and 802.3x
	Standard Features	ProLiant Teaming including Network Fault Tolerance, Transmit Load Balancing, and Switch-Assisted Load Balancing 9K Jumbo frames (4K Jumbo frames when in FCoE mode) Microsoft Windows Receive Side Scaling (RSS) Hardware-based accelerated iSCSI iSCSI boot Flex-10 capability Fibre Channel over Ethernet (FCoE) TCP/IP offload engine (stateless TCP/IP) Autosencing 1Gb/10Gb Ethernet

Overview

HP StoreEasy 3830 Gateway Storage Blade

HP StoreEasy 3830 Gateway Storage Blade is a new converged storage platform from HP that supports both file and application workloads over ubiquitous Ethernet. HP StoreEasy delivers file and application storage made easy. Built on industry-standard HP ProLiant BL460c Generation 8 hardware, the HP StoreEasy 3830 Gateway Storage Blade is designed to deliver efficient, secure, and highly available storage that supports hundreds to thousands of concurrent users and multiple workloads. The HP StoreEasy 3830 Storage product reduces your cost of ownership by simplifying management, increasing resource utilization, centralizing growth, and protecting your data. StoreEasy management provides a simple and consistent experience for centrally managing block and file storage for multiple workloads.

What's New

- Intuitive wizard driven tool optimizes storage provisioning.
- Deduplication evaluation tool that can be launched from StoreEasy interface and run against local data and remote file shares.
- Choice of headless mode for increased security and lower maintenance.
- Optional onboard HP Data Protector software and HP Autonomy LiveVault for cloud and hybrid cloud backup and recovery.
- Wizard-based easy clustering for gateways simplifies deployment of highly available file services for SANs.

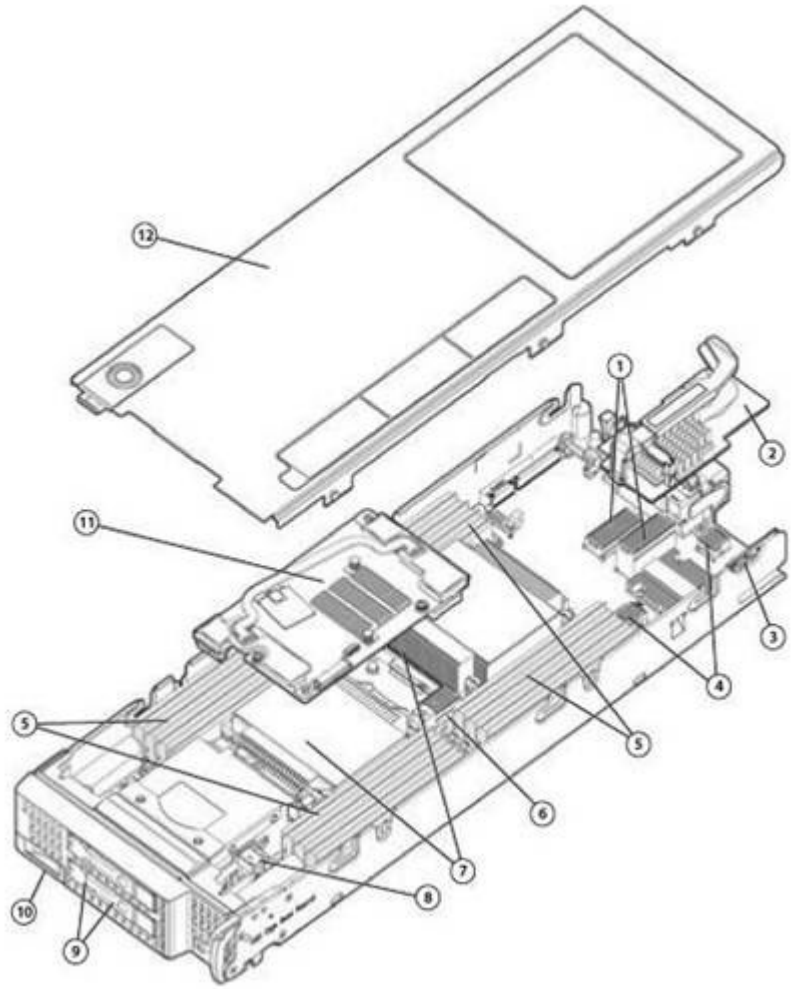
Models

HP StoreEasy 3830 Gateway Storage Blade

The HP StoreEasy 3840 Gateway Storage Blade gives you the capability to add file services from your C3000 or C7000 Blade Enclosure to your array or Fibre Channel SAN. The StoreEasy 3840 is built upon a ProLiant BL460c Gen 8 Blade server.

HP StoreEasy 3830 Storage Gateway Blade	B7E01A

Overview



1. Two (2) PCIe 3.0 mezzanine I/O expansion slots
2. FlexibleLOM adapter
3. Micro SDHC card connector
4. FlexibleLOM connectors (supporting one (1) FlexibleLOM)
5. Sixteen (16) DDR3 DIMM memory slots (8 per processor)
6. HP Smart Array P220i Controller connector
7. Up to two (2) Intel® Xeon® E5-2600 family processors
8. Internal USB 2.0 and Trusted Platform Module (TPM) connectors
9. Two (2) small form factor (SFF) hot-plug drive bays
10. HP c-Class Blade SUV (Serial, USB, VGA) connector
11. HP Smart Array P220i Controller with 512MB FBWC
12. Access panel

Features and Benefits

Efficient: Save money and time	Support hundreds to thousands of users concurrently accessing their files thanks to a high performance file serving controller. Increase capacity use with non-intrusive variable chunk de-duplication delivers an average 50-60% space savings. Improve management efficiency with straightforward and consistent management experience that is optimized for IT generalists, including the ability to remotely deploy and configure via Integrated Lights-Out. Consolidate multiple workloads and roles in a single platform with included support for a broad range of file access protocols, VMWare, Microsoft Hyper-V, and SQL Server application storage, iSCSI block access, and support for services such as print, DNS, and DHCP. Reduce branch office WAN usage by automatically caching frequently accessed corporate data center files with Hosted BranchCache. Integrate seamlessly into Windows IT infrastructure.
Secure: Protect your data and organization always	Protect data while at rest with file system encryption and BitLocker Drive Encryption, and while it is being transferred with SMB 3.0 encryption and signing. File Classification Infrastructure facilitates sophisticated access controls and support for Active Directory Rights Management Services protects files no matter where they go. Install and run endpoint protection such as antivirus on the system itself - eliminating the cost and complexity of connecting an external endpoint protection server. Online snapshots enable users to directly recover files and prior file versions. Broad support for agent-based data protection enhances the ability to meet backup and recovery SLAs. Leverage optional HP Autonomy LiveVault and HP Data Protector software for highly secure and efficient policy driven offsite cloud and hybrid cloud backup.
Highly Available: Prevent User and Organization disruption	Turnkey clustered controller appliances and gateways with transparent failover for SMB and NFS provide continuous availability. Cluster aware updates enable online maintenance. Increase uptime with such standard features as HP Active Health System, mirrored OS disks, RAID for data disks, redundant fans and power, and advanced memory protection maximize uptime. Confidently deploy large volumes leveraging improved file system online self-healing, online verification, and precise and rapid repair that massively reduces downtime from file corruption. Three year onsite parts and labor warranty for the system, and one year of software telephone support.

Standard Features

Operating System Microsoft Windows Storage Server 2012 R2, Standard Edition

- Windows Storage Server 2012 R2 (WSS2012 R2) includes a robust range of file serving and storage capabilities. It addresses heterogeneous environments and it enables more efficient storage utilization. WSS2012 R2 delivers a similar level of performance and reliability as more expensive storage solutions and it offers support for both file (SMB and NFS) and block (iSCSI) protocols, allows for a flexible mix of configurations and includes advanced data management tools. WSS2012 R2 leverages your Windows Server management skill sets and tools including Active Directory, PowerShell and System Center.
- Extensive protocol support: SMB (, 2.0, 2.1, 3.0, 3.02), NFS (v2, v3, v4.1), WebDAV, HTTP/HTTPS, FTP/FTPS, ISCSI
- SMB 3.0: Leverage high performance continually available file shares to deliver feature-rich storage for business-critical applications and virtual servers using advanced new functionality.
- New VHDX Standard: Deploy larger capacity virtual storage that can grow to 16 terabytes, is more resilient against corruption, and provides more efficient usage of new 4 KB sector hard disks with the new VHDX virtual storage standard.
- Live Storage Migration: Maintain maximized service-level availability even while moving virtual machine storage between host servers independent of the actual virtual machine.
- SMB Multi-channel: Enable aggregation of network bandwidth and network fault tolerance when multiple paths are available between SMB clients and file servers.
- NFS v4.1: For Windows Storage Server 2012 R2, Server for NFS has been updated to support continuous availability. These improvements make it possible to reliably store and run VMware ESX on a virtual machine that is running Windows Server 2012 R2 by using the NFS protocol to share files. Additional improvements in failover clustering take advantage of better resilience to hardware and software outages that may afflict individual cluster nodes. At the same time, failover clustering isolates VMware ESX hypervisor hosts from intermittent glitches during failovers.
- iSCSI: Some applications require block storage. iSCSI Target Server can provide these applications with continuously available block storage. Since the storage is remotely accessible it can also consolidate block storage for central or branch office locations. By using boot-capable NICs or a software loader, you can deploy hundreds of diskless servers. This is ideal for large deployments of identical operating system images, such as a Hyper-V server farm or High Performance Computing (HPC) clusters.
- Data Deduplication: Data deduplication enables Windows Storage Server 2012 R2 to store more data in less physical space and achieve storage efficiency that is significantly higher than was possible in previous releases of Windows Storage Server that used Single Instance Storage (SIS) or NTFS file system compression. Data deduplication uses variable size chunking and compression, which deliver optimization ratios of 2:1 for general file servers and up to 20:1 for virtualization data. Evaluate your savings with the Deduplication Evaluation Tool
- Volume Shadow Copy Service: creates point-in-time copies (snapshots) of files and folders at predetermined time intervals that can then be accessed from client computers.
- VSS for Remote SMB File Shares: Leverage proven Volume Shadow Copy Service (VSS) to offload snapshot and backup operations to remote storage from VSS hardware providers within Hyper-V virtual machines.
- Offloaded data transfer (ODX): Enables you to accomplish more with existing external storage arrays by letting you quickly move large files and virtual machines directly between storage arrays, which reduces host CPU and network resource consumption.
- Thin Provisioning and Trim: Full support for thinly provisioned storage arrays, which lets you get the most out of your storage infrastructure. Sophisticated storage solutions offer just-in-time allocations known as "thin provisioning," and the ability to reclaim storage that is no longer needed, known as "trim."

Standard Features

- Hosted Branch Cache - Using client/server architecture, Windows 7 client computers can cache content on the local network via the Hosted Cache running on the StoreEasy 5000 Storage. Other clients who need the same content retrieve it directly from the Hosted Cache.
- DFS Namespaces: Enables you to group shared folders that are located on different servers into one or more logically structured namespaces. Each namespace appears to users as a single shared folder with a series of subfolders. However, the underlying structure of the namespace can consist of numerous file shares that are located on different servers and in multiple sites.
- Distributed File System Replication (DFS-R): Enables you to efficiently replicate folders (including those referred to by a DFS namespace path) across multiple servers and sites. DFS Replication uses a compression algorithm known as remote differential compression (RDC). RDC detects changes to the data in a file, and it enables DFS Replication to replicate only the changed file blocks instead of the entire file.
- Work Folders: With Work Folders users can store and access work files on personal computers and devices, often referred to as bring-your-own device (BYOD), in addition to corporate PCs. Users gain a convenient location to store work files, and they can access them from anywhere. Organizations maintain control over corporate data by storing the files on centrally managed file servers, and optionally specifying user device policies such as encryption and lock-screen passwords. Work Folders can be deployed with existing deployments of Folder Redirection, Offline Files, and home folders. Work Folders stores user files in a folder on the server called a sync share. You can specify a folder that already contains user data, which enables you to adopt Work Folders without migrating servers and data or immediately phasing out your existing solution.
- File Server Resource Manager (FSRM): File Server Resource Manager is a set of features that allow you to manage and classify data that is stored on file servers. File Server Resource Manager includes the following features:
  - Storage reports: Storage reports are used to help you identify trends in disk usage and how your data is classified. You can also monitor a selected group of users for attempts to save unauthorized files.
  - File Classification Infrastructure: File Classification Infrastructure provides insight into your data by automating classification processes so that you can manage your data more effectively. You can classify files and apply policies based on this classification. Example policies include dynamic access control for restricting access to files, file encryption, and file expiration. Files can be classified automatically by using file classification rules or manually by modifying the properties of a selected file or folder.
  - File Management Tasks: File Management Tasks enables you to apply a conditional policy or action to files based on their classification. The conditions of a file management task include the file location, the classification properties, the date the file was created, the last modified date of the file, or the last time the file was accessed. The actions that a file management task can take include the ability to expire files, encrypt files, or run a custom command.
  - Quota management: Quotas allow you to limit the space that is allowed for a volume or folder, and they can be automatically applied to new folders that are created on a volume. You can also define quota templates that can be applied to new volumes or folders.
  - File screening management: File screens help you control the types of files that user can store on a file server. You can limit the extension that can be stored on your shared files. For example, you can create a file screen that does not allow files with an MP3 extension to be stored in personal shared folders on a file server.
- Initial Configuration Tasks Wizard: Simplifies and accelerates new device deployment by presenting basic system settings on your first boot.
- Server Manager
- Unlimited Client Access Licenses (CALs) included

NOTE: Windows Storage Server 2012 R2 and Windows Server 2012 R2 are built on the same code base.

Standard Features

Applications certified for Windows Server are expected to have the same application compatibility profile on Windows Storage Server. Windows Storage Server 2012 R2 and Windows Server 2012 R2 have the same application frameworks, services and plumbing to support running the full breadth of Window-compatible applications. Applications that rely upon certain roles that are removed from Windows Storage Server 2012 R2, such as fax server, active directory domain controller or terminal services will not be able to leverage those roles. Independent Software Vendors (ISVs) ultimately decide what versions and editions of Windows are supported by their products and users should review ISV compatibility and support information before purchasing. HP StoreEasy customers should review the End User License Agreement (EULA) to see the types of applications that are permitted for installation. All versions of Windows Storage Server 2012 R2 can join Active Directory domains, but cannot be a domain controller. More information on Windows Storage Server 2012 R2 Standard Edition can be found here: http://technet.microsoft.com/en-us/library/jj643303.aspx

Processor / Cache Memory	Intel® Xeon® E5-2609 (2.40GHz/4-core/10MB/80W) Processor

Memory	**Type**	**DDR3 Registered (RDIMM) standard**
	Standard	16GB (4 x 4GB)
	DIMM Sockets	16

Network Controller	NIC Ports	2
	Controller	One (1) HP FlexFabric 10Gb 2-port 554FLB FlexibleLOM

HP StoreEasy 3830

Expansion Slots

Two (2) I/O expansion mezzanine slots:

- x16 PCIe 3.0 Type A (supports Type A mezzanine cards) (expansion slot 1).
  NOTE: This expansion slot supports dual-port mezzanine cards: one port is routed to interconnect module bay 3 and the other to bay 4.
- x16 PCIe 3.0 Type B (supports Type A and Type B mezzanine cards (expansion slot 2).
  NOTE: This expansion slot supports dual-port and quad-port mezzanine cards. For dual-port cards, one port is routed to interconnect module bay 5 and the other to bay 6. For quad-port cards, one port is routed to interconnect module bay 5, one to bay 6, one to bay 7, and one to bay 8.
  NOTE: A second processor must be installed (in processor slot 2) to have access to the second expansion slot (expansion slot 2).

Mezzanine card options include:

- Dual-port 10Gb FlexFabric, 10Gb Flex-10, 10GbE options, and quad-port 1Gb Ethernet server adapter mezzanine options for additional network ports.
- Dual-port 8Gb Fibre Channel HBA for SAN connectivity.

Standard Features

Storage Controller	**NOTE:** HP StoreEasy 3000 Gateway Storage Blade products include a storage controller designed for internal drives housing the O/S mirror only; an HBA is required to address external SAN or array storage.	
	Controller(s)	HP Smart Array P220i with 512 MB FBWC
	RAID	0/1
Storage	Hard Drives	
	Internal	Two 2.5" (Small Form Factor) hot-plug bays • 2 x 300GB 6G SAS 15K SFF HDDs for O/S mirror
	External	Designed for attach to Fibre Channel (HBA required), SAS (HBA required), or iSCSI (Microsoft iSCSI initiator included) arrays
Power Supply	Powered by c-Class Blade Enclosure	
System Fans	Within c-Class Blade Enclosure	
Form Factor	Half-height server blade that plugs into the HP BladeSystem c3000 and c7000 enclosures	

Optional Software

HP Data Protector Software

HP Data Protector software is enterprise data protection and disaster recovery, ensuring recovery from any disruption. Data Protector integrates a variety of techniques to eliminate backup and recovery windows. The capabilities to eliminate planned downtime range from online backup and backup of open files to zero-downtime, zero-impact backup. The software provides industry-leading instant recovery as well as several disaster recovery alternatives to eliminate unplanned downtime, allowing recovery of entire data centers in minutes.

Data Protector is enabling organizations to reduce costs by automating routine tasks to maximize the effectiveness of the data protection staff. For the price of an entry-level product, it provides the enterprise functionality customers need. Data Protector scales from single server to distributed enterprise, covering an extensive range of heterogeneous applications, operating environments and storage configurations with a single solution.

All HP StoreEasy 3840 support using Data Protector as a backup software solution.

For more information on HP Data Protector: http://www.hp.com/go/dataprotector

HP Autonomy LiveVault

HP Autonomy LiveVault enables organizations to protect their critical application data and manage their long-term retention needs in the cloud. The LiveVault agent that is installed on HP StoreEasy Storage encrypts all data before transferring it. All data remains encrypted at HP Autonomy's secure, offsite, underground data centers - as well as on the optional TurboRestore(TM) appliance which resides in the customer data center. To ensure the physical security and availability of stored data, the LiveVault service mirrors all data to a second, geographically dispersed data center for full failover and redundancy. Visit http://www.autonomy.com/storeeasy.

SAN / Array Compatibility

Host Bus Adapter (HBA) Support

HP StoreEasy 3830 Gateway Storage Blade products are designed to be connected to a SAN or storage array by adding a recommended Fibre Channel or SAS HBA, or by using an iSCSI initiator.

HBA selection is left as your choice based on existing infrastructure and/or desired array support. Please see compatible HBAs listed in the 'Options' section below.
NOTE: See the following URL for additional information about Fibre Channel HBAs:
http://h18006.www1.hp.com/storage/saninfrastructure/hba.html

HP SAN / Array Support

HP 3PAR StoreServ	http://h18006.www1.hp.com/storage/disk_storage/3par/index.html
HP StoreVirtual	http://h18000.www1.hp.com/products/quickspecs/13254_div/13254_div.html
HP P9000/XP	http://h18006.www1.hp.com/storage/xparrays.html
HP P6000/EVA	http://h18006.www1.hp.com/products/storageworks/eva/index.html
HP P2000/MSA	http://h18000.www1.hp.com/products/quickspecs/13551_na/13551_na.pdf

HP StoreEasy 3830 Gateway Storage Blade products and third-party storage arrays/SAN interoperability statement

HP acknowledges that some third-party storage arrays/SAN environments have been successfully tested for interoperability with HP StoreEasy 3840 products. HP will provide support for the HP StoreEasy 3840 products when connected to third-party storage arrays, but HP will not provide support on third-party storage arrays/SAN unless specifically called out in an HP Support contract. HP may support the third-party SAN environment attached to HP StoreEasy 3840 product when specifically under contract with HP, but that SAN coverage does not extend to supporting the SAN connectivity of the third-party array.

If you call HP Services and the problem is determined to be caused by a third-party storage array or the storage arrays' connectivity into a non-HP supported SAN, you will be directed to contact the third-party storage array supplier for support. Please refer to the third-party supplier for information relating to specific support of their storage arrays with Windows Storage Server 2012 R2 Standard Edition.

Models (Pre-configured)

These models come with factory-installed drives and the Microsoft Windows Storage Server 2012 Standard Edition operating system pre-installed

Choose a Pre-configured Model

NOTE: All options ship separately and are not factory integrated.

HP StoreEasy 3830 Gateway Storage Blade		
	Operating System	Microsoft Windows Storage Server 2012 R2, Standard
Specifications	**Processor**	Intel® Xeon® E5-2609 v2 (2.5GHz/4-core/10MB/6.4GT-s QPI/80W) Processor
	Memory	16 GB (4 x 4GB Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory)
	Storage Controller	Embedded Smart Array 220i with 512MB FBWC Controller with internal SAS ports for O/S drives
	Internal Storage	2 x 300GB 6G SAS 10K 2.5" ENT hot-plug SFF HDDs (O/S mirror)
	Network Ports	HP FlexFabric 10Gb 2-port 554FLB FlexibleLOM
	Expansion Slots	2 x PCIe 3.0 mezzanine
	Form Factor	Half-height C-class blade
HP StoreEasy 3830 Gateway Storage Blade		B7E01A

Add a second processor

HP BL460c Gen8 Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/80W) Processor Kit	662070-B21

Add More Memory

NOTE: HP recommends that you add the same type memory to the product that is shipped standard with the product.

NOTE: HP memory from previous generation servers are not fully compatible with Smart Memory features in Gen8 Servers.

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

NOTE: PC3L is a low voltage memory.

See the HP ProLiant Gen 8 QuickSpecs for information on memory configurations. http://h18004.www1.hp.com/products/quickspecs/14212_na/14212_na.html

Add additional options

HP Networking

NOTE: Each 10 Gigabit Ethernet adapter requires a minimum of 2GB of server memory.

NOTE: A 10 Gigabit Ethernet adapter supports linking at 1Gbps or 10Gbps when connected to an interconnect module with 10Gb Ethernet downlinks.

NOTE: A 10 Gigabit Ethernet adapter supports linking at only 1Gbps when connected to

an interconnect module with 1Gb Ethernet downlinks.
NOTE: The 10 Gigabit Ethernet adapters on each server blade connects to a 10Gb interconnect in bays 3-6 (HP BladeSystem c7000 Enclosure) or bays 2-4 (HP BladeSystem c3000 Enclosure).

10 Gigabit Ethernet Mezzanines

HP Ethernet 10Gb 2-port 560M Adapter 665246-B21
NOTE: Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14478_na/14478_na.html.

HP Flex-10 10Gb 2-port 530M Adapter 631884-B21
NOTE: Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14217_na/14217_na.html.

HP FlexFabric 10Gb 2-port 534M Adapter 700748-B21
NOTE: Please see QuickSpecs for technical specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/14619_na/14619_na.html

HP Flex-10 10Gb 2-port 552M Adapter 674764-B21
NOTE: Please see QuickSpecs for technical specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/14218_na/14218_na.html

HP FlexFabric 10Gb 2-port 554M Adapter 647590-B21
NOTE: Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14221_na/14221_na.html.

1 Gigabit Ethernet Mezzanines

HP Ethernet 1Gb 4-port 366M Adapter 615729-B21
NOTE: Please see QuickSpecs for technical specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/14335_na/14335_na.html

HP Infiniband Mezzanine Adapters

NOTE: When an InfiniBand adapter is installed in mezzanine slot 1, only one port is active (regardless of operating mode). When installed in any other mezzanine slot, both ports are active.

HP Infiniband QDR/Ethernet 10Gb 2-port 544M Adapter 644160-B21

NOTE: The QDR InfiniBand adapter may be installed in any mezzanine slot of the server.

HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544M Adapter 644161-B22

NOTE: The FDR InfiniBand adapter must be installed in mezzanine slot 1 for FDR mode and may be installed in any mezzanine slot if operated in any other mode.

HP InfiniBand FDR 2-port 545M Adapter 702213-B21

NOTE: InfiniBand QDR and FDR speeds are only supported on the HP BladeSystem c7000 Enclosure. For additional information, please see the HP BladeSystem c7000 Enclosure and InfiniBand QuickSpecs at:
http://h18004.www1.hp.com/products/quickspecs/12586_na/12586_na.html
http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.htm

FlexibleLOM Adapters

NOTE: The server supports one (1) FlexibleLOM that is installed in the FlexibleLOM connectors and is already included in the pre-configured models. However, it must be added in Step 2 for Configure-to-Order Models. The FlexibleLOM options below are used to change these original FlexibleLOMs.

Models (Pre-configured)

Storage Controllers	HP Smart Array P721m/2G FBWC 4-ports Ext Mezzanine SAS Controller	650072-B21
	HP Smart Array P721m/512 4-ports Ext Mezzanine SAS Controller	655636-B21
	HP Smart Array P731m/2GB FBWC 6Gb 4-ports Ext Mezzanine SAS Controller	698535-B21
	HP Smart Array P731m/512 FBWC 6Gb 4-ports Ext Mezzanine SAS Controller	698536-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14404_na/14404_na.html. (Smart Array P721M Controller) http://h18000.www1.hp.com/products/quickspecs/13200_na/13200_na.html. (Smart Array Advanced Pack)	
HP Security	HP Trusted Platform Module Option	488069-B21
	NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM. **NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	

HP StoreEasy 3830 Gateway Storage products are designed and optimized for connection to SAN storage arrays and use HBAs, rather than additional Storage Controllers.
NOTE: HBAs are not included standard. HBA selection is left as your choice based on existing SAN infrastructure and/or desired array support.

HP Fibre Channel	HP LPe1605 16Gb Fibre Channel HBA for BladeSystem c-Class **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/ 14742_na/ 14742_na.html	718203-B21
	HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14338_na/14338_na.html	659818-B21
	HP QMH2672 16Gb Fibre Channel Host Bus Adapter **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14622_na/14622_na.html	710608-B21
	HP QMH2572 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class **NOTE:** Please see QuickSpecs for technical specifications and additional information at http://h18000.www1.hp.com/products/quickspecs/14230_na/14230_na.html	651281-B21

HP X3800sb G2 WSS2012 OS Upgrade	HP X3800 G2 Upgrade to Windows Storage Server 2012 Standard Edition X3800 G2 Network Storage Server Gateways with the Microsoft Windows Storage Server 2008 R2, Enterprise Edition Operating System are eligible for a Software-Only Pay -for-Upgrade to the Microsoft Windows Storage Server 2012 Standard Edition operating system: This upgrade is performed as a clean install and all system configuration will be lost	

Models (Pre-configured)

including share configurations, so a full backup of the data should be done prior to upgrading
* A minimum of two OS drives that are the same type and capacity (146GB minimum) must be present in the system before installation.
NOTE: Some expansion cards, including HBAs and NICs, may not be supported by Windows Storage Server 2012. Check Windows Server 2012 driver availability before purchase and installation. All original components that were standard on the X3800 G2 are supported.
NOTE: Check for HP and 3rd-party software qualification with the Windows Storage Server 2012 operating system before purchase and installation.

HP X1800/X3800 G2 WSS2012 Upgrade Software	TC392A

Warranty

HP StoreEasy 3830 Gateway Storage Blade products come with a standard 3-3-3 warranty (3 years parts exchange, 3 years labor and 3 years onsite, next business day response). Software media is warranted to be free of physical defect for a period of 90 days from delivery.

Services Included with the Product One year of HP Software Support, standard 9x5 business hours (software advisory and remedial software telephone support, new version license rights, and media and documentation distribution service).

For increased uptime, productivity and ROI-HP Care Pack packaged services for Storage

These days, you need to get the most out of your storage investment-you can't afford not to. When you buy HP storage products and solutions, it's also a good time to think about what levels of service and support you may need. To help take the worry out of deploying, designing, maintaining, and managing your environment, we've designed a portfolio of service options that are as: flexible, reliable and scalable as your storage. Unlike storage-only vendors, we take a holistic approach to your entire environment, bridging storage, servers, blades, software and network infrastructures with our HP Care Pack packaged services for Storage.

Protect your business beyond the warranty

When it comes to robustness and reliability, standard warranties on today's computing equipment have matured just as the technologies have matured. Good news on some fronts-but also a source of potential problems and subsequent consequences that come from depending on standard warranties alone. Standard warranty protects against product defects and some causes of downtime- but not the business. By using a standard approach to warranty uplifts, such as HP Care Pack Services, you can reduce downtime risks and be more certain of operational consistency for both mission-critical and standard business computing. Simply put, HP Care Pack Services normalize the warranty of combined products - helping you proactively guard against unplanned downtime.

Extending warranties with HP Care Pack Services

For cost-effective upgrading or extending your standard warranty, HP Care Pack Services offer a suite of standard reactive hardware and software support services that are sold separately, or combined as with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition, with HP Proactive Select we offer an innovative approach to service delivery that gives you the flexibility to acquire the specific proactive services you need today, then add services as your needs evolve. HP Proactive Select offers a broad set of technical or per-event type service options - including server, storage, and network, SAN device, and software, environment, installation and education services. Services that you can mix and match depending on your specific requirements, from preliminary planning and equipment delivery to installation, configuration, integration, and testing, through every level of ongoing support. Our HP Care Pack packaged services for Storage assures help when you need it most. And for many products, post-warranty HP Care Pack Services are available when your original warranty has expired.

HP Storage Services: Offering reliability, flexibility and value-just like your storage

HP Storage Services offers a full spectrum of customer care, from technology support to complex migrations to complete completely managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education offers flexible, comprehensive training on storage networking, disk storage systems, and storage software to help your IT staff get the most out of your investments. And HP Financial solutions extend innovative financing and asset management programs to cost-effective buy, manage and eventually retire your older equipment.

HP Storage Services, the trusted business technology experts who manage your technology in action, because when technology works, business works. http://www.hp.com/hps/storage

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at

Service and Support

http://www.hp.com/go/lookuptool

Recommended HP Care Pack Services for optimal satisfaction with your HP product.

Recommended Services

3-Year HP Support Plus 24

For a higher return on your storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Improve uptime with responsive hardware and software services
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP software at a predictable cost
- Increase customer satisfaction-with no interoperability gaps

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf

HP Installation and Startup Service for StoreEasy Storage

For smooth startup, HP Installation and Startup Service provides for deployment of your HP StoreEasy product while helping you establish readily available access to and management of your critical data and applications. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- System installation and setup by a HP technical specialist
- Reduced implementation time and cost
- Verification prior to installation that all service prerequisites are met
- Availability of an HP service specialist to answer basic questions related to this service during the orientation session
- Potential expansion of the number of shares and hosts

http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-6112ENL.pdf

HP Proactive Select Service

HP Proactive Select Service improves your IT performance and manageability through the use of cost effective flexible services. HP provides technical expertise and best practices to accelerate ROI of your technology investment. Selectable proactive services span a wide range of technology and process services - a flexible way to purchase proactive services that fit your particular environment and situation.

HP Proactive Select Service is technology agnostic and purchased in addition to your choice of underlying reactive support.

- Access to a list of flexible and customizable proactive service activities
- Enhance customers' in-house IT team with complementary assistance from HP
- Improved time to solution
- Reduce business risk and project costs by accessing HP specialists
- Simplify IT operational procedures by leveraging HP best practices

http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-3842ENN.pdf

Optional HP Care Pack Services that will enhance your HP product experience.

Optional Services

HP Data Migration Service for Windows
For customers who need to safely migrate Windows data within their TCP/IP networks with minimal impact to their operations:

You have a need to migrate data between Windows servers within your TCP/IP network. Or you have a need to migrate storage for your Windows servers. Or both. And you need to accomplish these migrations efficiently while minimizing risk at the same time.

HP Data Migration Service for Windows offers you a cost competitive and convenient way to accommodate data migration triggered by a need to refresh or consolidate storage, or to create different storage tiers. This service offers a migration cost in line with the costs of storage products in small and medium-sized storage environments. The service is delivered via a skilled HP service specialist with special consideration for data availability, integrity, and ongoing operational performance during the transfer process.
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-4734ENW.pdf

eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal
The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: http://www.hp.com/support

Customer Technical Training

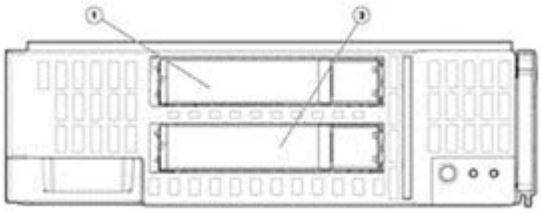
Consider education as an integral part of your strategy to get the best return on investment for your HP storage solution. HP offers a variety of training courses on storage software, networking, archiving and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led courses at one of our 80 training centers worldwide to on-site training customized to your needs or online.
www.hp.com/learn/storage

HP Services Awards

HP Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction. For a list of all our awards, please visit:
http://h20219.www2.hp.com/services/cache/433028-0-0-225-121.html

Additional Services Information	For more information about HP Care Pack Services for Storage, please visit: http://www.hp.com/hps/storageIf you have specific questions, contact your local HP representative. Contact information for a representative in your area can be found at "Contact HP" http://www.hp.com

Storage



1 - 2 Two 2.5" (SFF) hot plug hard drive bays (ships with two SAS drives for pre-installed OS)

StoreEasy 3830 Gateway Storage Blade			
System Unit	**Dimensions** (H x W x D) (with bezel)	7.11 x 2.18 x 20.37 in (18.07 x 5.54 x 51.76 cm)	
	Weight (approximate)	Maximum: all processors, 16 DIMMs, hard drives, mezzanine cards, and two flash cache batteries installed)	14.00 lb (6.33 kg)
		Minimum: one processor and 2 DIMMs installed	10.50 lb (4.75 kg)
	Power Specifications	For power specifications including input requirements, BTU rating, and power supply output, please see the: • HP BladeSystem c3000 Enclosure QuickSpecs at http://h18000.www1.hp.com/products/quickspecs/12790_div/12790_div.html. • HP BladeSystem c7000 Enclosure QuickSpecs at http://h18000.www1.hp.com/products/quickspecs/12810_div/12810_div.html To review typical system power ratings use the HP Power Advisor which is available via the online tool located at www.hp.com/go/hppoweradvisor	
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1,000 ft) above sea level to a maximum of 3,050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).

		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	3,050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
		Non-operating	9,144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
	Acoustic Noise	For acoustic noise specifications, please see the HP BladeSystem c-Class Enclosures QuickSpecs located at: HP BladeSystem c3000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12790_div/12790_div.html HP BladeSystem c7000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12810_div/12810_div.html	

HP iLO 4 On System Management	**Architecture**	PCI Express based health and remote management ASIC
	Processor	Embedded ARM processor core operating at 400MHz
	Upgradeability	Firmware upgradeable via Flash ROM
	Video Support	1920 x 1200 (16 bpp) DVR max resolution
	Interfaces	HP iLO Dedicated* Network connection (10/100/1000 Mb/s) on rack, tower and SL systems *Optional Module on some servers HP iLO Shared Network connection (10/100/1000 Mb/s) on rack, tower and SL systems HP iLO network connection to blades (100 Mb/s) to Onboard Administrator (with 10/100/1000 Mb/s uplink) on blade systems
	Memory	16 MB Flash 256 MB DDR 3 with ECC (112 MB after ECC and video)
	Operating System Support	For information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: http://www.hp.com/go/ossupport
	Client System Support	For information on Client System Support, please visit the HP iLO Feature Comparison Site at: www.hp.com/go/compareilo
	Client Browser Support	Microsoft Internet Explorer 9 **NOTE:** For customers using Protected Mode, please use the Java based version of Integrated Remote Console.

		Microsoft Internet Explorer 8 **NOTE:** For customers using Protected Mode, please use the Java based version of Integrated Remote Console.
		Microsoft Internet Explorer 7
		Firefox Extended Support Release (ESR) 10 (on supported Windows and Linux systems
		Firefox 3.6 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access
		Secure Socket Layer
		Secure Shell version 2
	Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface
		AES encryption of video
		RC4 encryption of video
	Directory Support Services	Active Directory v1.0 (Windows 2003)
	Driver Support	HP ProLiant iLO 4 Management Controller Driver Package
	Management protocols supported	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML
HP Smart Array P420i Controller	**Disk Drive and Enclosure Interface - Transfer Rate**	6Gb/s SAS (Serial Attached SCSI)
	Server Interface	x4 PCI Express host interface
	Cache Memory Speed	512MB flash backed write cache (FBWC) cache standard
	Logical Drives Supported	64 (with included 512MB cache)
	Host Memory Addressing	64-bit, supporting servers memory space greater than 4GB
	RAID Support	RAID 1 (mirroring) and RAID 0 (striping)
	Other	Upgradeable firmware with recovery ROM Online drive flash (with SAS drives)

Technical Specifications

HP FlexFabric 10Gb 2-port 554FLB FlexibleLOM	**Type**	Integrated dual-port KR 10Gb FlexibleLOM with FlexFabric (Flex-10, FCoE, hardware-based iSCSI, iSCSI boot, TCP/IP offload engine, and autosencing 1Gb/10Gb Ethernet capability)
	Network Processor	Emulex BE3
	Data Transfer Method	x8 PCI Express 2.0
	Network Transfer Rate	Two ports, each at 20Gbps full duplex; 40Gbps aggregate full duplex theoretical bandwidth **NOTE:** Each port is autosensing 1Gb/10Gb, and can interoperate with 1Gb or 10Gb HP BladeSystem c-Class interconnect components. Both ports will operate at the same speed. **NOTE:** Each port on the 554FLB adapter transmits from the server at 20Gbps (theoretical) full duplex.
	IEEE Compliance	802.1p, 802.1q, 802.1qau, 802.3ad, 802.3ae, 802.3ap (10GBase-KX4) and 802.3x
	Standard Features	ProLiant Teaming including Network Fault Tolerance, Transmit Load Balancing, and Switch-Assisted Load Balancing 9K Jumbo frames (4K Jumbo frames when in FCoE mode) Microsoft Windows Receive Side Scaling (RSS) Hardware-based accelerated iSCSI iSCSI boot Flex-10 capability Fibre Channel over Ethernet (FCoE) TCP/IP offload engine (stateless TCP/IP) Autosencing 1Gb/10Gb Ethernet

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Technical Specifications

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The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.